The Management University of Africa

MUA

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UNDERGRADUATE UNIVERSITY EXAMINATIONS

SCHOOL OF MANAGEMENT AND LEADERSHIP

DEGREE OF BACHELOR OF ARTS IN DEVELOPMENT STUDIES

BDS 307 : BIODIVERSITY MANGEMENT

DATE: ***6TH APRIL 2017***

DURATION: 2 HOURS

MAXIMUM MARKS: 70

INSTRUCTIONS:

1. Write your registration number on the answer booklet.
2. DO NOT write on this question paper.
3. This paper contains SIX (6) questions.
4. Question ONE is compulsory.
5. Answer any other THREE questions.
6. Question ONE carries 25 MARKS and the rest carry 15 MARKS each.
7. Write all your answers in the Examination answer booklet provided.

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

DECOUPLING ENVIRONMENTAL DEGRADATION AND ECONOMIC GROWTH

Historically there has been a close correlation between economic growth and environmental degradation: as communities grow, so the environment declines. This trend is clearly demonstrated on graphs of human population numbers, economic growth, and environmental indicators. Unsustainable economic growth has been starkly compared to the malignant growth of a cancer because it eats away at the Earth's ecosystem services which are its life-support system. There is concern that, unless resource use is checked, modern global civilization will follow the path of ancient civilizations that collapsed through overexploitation of their resource base. While conventional economics is concerned largely with economic growth and the efficient allocation of resources, ecological economics has the explicit goal of sustainable scale (rather than continual growth), fair distribution and efficient allocation, in that order. The World Business Council for Sustainable Development states that "business cannot succeed in societies that fail". In economic and environmental fields, the term decoupling is becoming increasingly used in the context of economic production and environmental quality. When used in this way, it refers to the ability of an economy to grow without incurring corresponding increases in environmental pressure. Ecological economics includes the study of societal metabolism, the throughput of resources that enter and exit the economic system in relation to environmental quality. An economy that is able to sustain GDP growth without having a negative impact on the environment is said to be decoupled. Exactly how, if, or to what extent this can be achieved is a subject of much debate. In 2011 the International Resource Panel, hosted by the United Nations Environment Programme (UNEP), warned that by 2050 the human race could be devouring 140 billion tons of minerals, ores, fossil fuels and biomass per year – three times its current rate of consumption – unless nations can make serious attempts at decoupling. The report noted that citizens of developed countries consume an average of 16 tons of those four key resources per capita per annum (ranging up to 40

or more tons per person in some developed countries). By comparison, the average person in India today consumes four tons per year. Sustainability studies analyse ways to reduce resource intensity (the amount of resource (e.g. water, energy, or materials) needed for the production, consumption and disposal of a unit of good or service) whether this be achieved from improved economic management, product design, or new technology. There are conflicting views whether improvements in technological efficiency and innovation will enable a complete decoupling of economic growth from environmental degradation. On the one hand, it has been claimed repeatedly by efficiency experts that resource use intensity (i.e., energy and materials use per unit GDP) could in principle be reduced by at least four or five-fold, thereby allowing for continued economic growth without increasing resource depletion and associated pollution.

Required

a) Describe the meaning of decoupling as applied in the case study **(3marks)**

b) Highlight **two** major differences between conventional economics and ecological economics **(4marks)**

c) Discuss **four** ways in which economic growth can be enhanced without increasing resource depletion **(8marks)**

d) Discuss **five** human activities that exacerbate ecosystem degradation **(10marks)**

QUESTION TWO

a) Identify **seven** soil management practices that could enhance soil fertility **(7marks)**

b) Highlight **four** characteristics of wetlands as part of ecosystems **(8marks)**

QUESTION THREE

a) Differentiate between Temperate grasslands and Montane grasslands **(5marks)**

b) Discuss **Five** major threats facing natural ecosystems **(10marks)**

QUESTION FOUR

a) Highlight **five** ways in which the goal of conserving wetlands can be realized **(5marks)**

b) Discuss **five** elements of sustainable agriculture **(10marks)**

QUESTION FIVE

a) Describe **five** causes of water deterioration in the World **(10marks)**

b) Discuss **two** major applications of genetic engineering **(5marks)**

QUESTION SIX

a) Discuss the concept of Ecosystem function as used in biodiversity conservation **(4marks)**

b) Highlight and discuss **three** protection and restoration techniques of biodiversity **(6marks)**

c) Highlight **five** principles of ecosystem management **(5marks)**